

19. The injection nozzle (1) according to claim 18, wherein the nozzle needle seat (4) is the shape of a truncated cone.

20. The injection nozzle (1) according to claim 19, wherein the cone angle of the nozzle needle seat (4) is approximately 60°.

21. The injection nozzle (1) according to claim 19, wherein the end of the nozzle needle (5) oriented toward the nozzle needle seat (4) is a cone and that the cone angle of the nozzle needle (5) is up to one degree greater than, preferably 15 to 30 angular minutes greater than, the cone angle of the nozzle needle seat (4).

22. The injection nozzle (1) according to claim 19, wherein the annular groove (8) runs parallel to the base surface of the cone.

23. The injection nozzle (1) according to claim 18, wherein a blind hole (2) adjoins the nozzle needle seat (4) and has at least one injection orifice (3).

24. The injection nozzle (1) according to claim 23, wherein when the injection nozzle (1) is closed, the distance of the transition (7) between the blind hole (2) and the nozzle seat (4) from the bottom (9) of the injection nozzle (1) and the distance of the annular groove (8) from the bottom (9) of the injection nozzle (1) are essentially equal.

25. The injection nozzle (1) according to claim 23, wherein the width of the annular groove (8) is approximately 0.1 mm to 0.3 mm, preferably approximately 0.16 mm to 0.24 mm.

26. The injection nozzle (1) according to 23, wherein the depth of the annular groove (8) is approximately 0.02 mm to 0.2 mm, preferably approximately 0.08 mm to 0.14 mm.

27. The injection nozzle (1) according to claim 23, wherein the blind hole (2) is conical.

28. The injection nozzle (1) according to claim 23, wherein the blind hole (2) is cylindrical.

29. The injection nozzle (1) according to claim 23, wherein the blind hole (2) is a mini-blind hole or micro-blind hole.

30. The injection nozzle (1) according to claim 18, wherein the nozzle needle seat (4) has at least one injection orifice (3).

31. The injection nozzle (1) according to claim 30, wherein when the injection nozzle (1) is closed, the distance of the piercing point (16) of the longitudinal axis of the injection orifice(s) (3) through the nozzle needle seat (4) from the bottom (9) of

the injection nozzle (1) and the distance of the annular groove (8) from the bottom (9) of the injection nozzle (1) are essentially equal.

32. The injection nozzle (1) according to claim 30, wherein the width of the annular groove (8) is greater than, preferably one-and-a-half times greater than, the diameter of the injection orifice(s) (3).

33. The injection nozzle (1) according to claim 30, wherein that the depth of the annular groove (8) is less than the width of the annular groove (8).

34. The injection nozzle (1) according to claim 30, wherein the depth of the annular groove (8) is approximately 0.02 mm to 0.1 mm, preferably approximately 0.04 mm to 0.07 mm.

35. The injection nozzle (1) according to claim 21, wherein the annular groove (8) runs parallel to the base surface of the cone.

36. The injection nozzle (1) according to claim 18, wherein a blind hole (2) adjoins the nozzle needle seat (4) and has at least one injection orifice (3), wherein the nozzle seat (4) is the shape of a truncated cone, and wherein the end of the nozzle needle (5) oriented toward the nozzle needle seat (4) is a cone and that the cone angle of the nozzle needle (5) is up to one degree greater than, preferably 15 to 30 angular minutes greater than, the cone angle of the nozzle needle seat (4).

37. The injection nozzle (1) according to claim 23, wherein when the injection nozzle (1) is closed, the distance of the transition (7) between the blind hole (2) and the nozzle seat (4) from the bottom (9) of the injection nozzle (1) and the distance of the annular groove (8) from the bottom (9) of the injection nozzle (1) are essentially equal.

38. The injection nozzle (1) according to 18, wherein the depth of the annular groove (8) is approximately 0.02 mm to 0.2 mm, preferably approximately 0.08 mm to 0.14 mm, wherein when the injection nozzle (1) is closed, the distance of the transition (7) between the blind hole (2) and the nozzle seat (4) from the bottom (9) of the injection nozzle (1) and the distance of the annular groove (8) from the bottom (9) of the injection nozzle (1) are essentially equal, and wherein the width of the annular groove (8) is approximately 0.1 mm to 0.3 mm, preferably approximately 0.16 mm to 0.24 mm.

39. The injection nozzle (1) according to claim 18, wherein the blind hole (2) is conical wherein when the injection nozzle (1) is closed, the distance of the transition (7) between the blind hole (2) and the nozzle seat (4) from the bottom (9) of the injection nozzle (1) and the distance of the annular groove (8) from the bottom (9) of the injection nozzle (1) are essentially equal, and wherein the width of the annular groove (8) is approximately 0.1 mm to 0.3 mm, preferably approximately 0.16 mm to 0.24 mm.

40. The injection nozzle (1) according to claim 18, wherein the blind hole (2) is cylindrical, wherein the width of the annular groove (8) is approximately 0.1 mm to 0.3 mm, preferably approximately 0.16 mm to 0.24 mm, and wherein the depth of the annular groove (8) is approximately 0.02 mm to 0.2 mm, preferably approximately 0.08 mm to 0.14 mm.

41. The injection nozzle (1) according to claim 18, wherein the blind hole (2) is a mini-blind hole or micro-blind hole, wherein the width of the annular groove (8) is approximately 0.1 mm to 0.3 mm, preferably approximately 0.16 mm to 0.24 mm, and wherein the depth of the annular groove (8) is approximately 0.02 mm to 0.2 mm, preferably approximately 0.08 mm to 0.14 mm.

42. The injection nozzle (1) according to claim 19, wherein the nozzle needle seat (4) has at least one injection orifice (3).

43. The injection nozzle (1) according to claim 21, wherein the nozzle needle seat (4) has at least one injection orifice (3).

44. The injection nozzle (1) according to claim 43, wherein when the injection nozzle (1) is closed, the distance of the piercing point (16) of the longitudinal axis of the injection orifice(s) (3) through the nozzle needle seat (4) from the bottom (9) of the injection nozzle (1) and the distance of the annular groove (8) from the bottom (9) of the injection nozzle (1) are essentially equal.